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TRANSPORTATION

No. 40

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AIR

FUTURE AVIATION DEVELOPMENTS FORECAST

Moscow VOZDUSHNYY TRANSPORT in Russian 5 Feb 81 p 3

[Article: "A Look Into the Future--'Nuclear Tugs,' Air-Cushion Aircraft and Solar-Powered Craft Will Be Launched"]

[Text] Aviation is one of the most rapidly developing fields of science and technology. For example, can one compare the "stack" aircraft of the beginning of the century to giant modern air liners and the small dirt airfields of the 1920s and 1930s to the present air terminal complexes equipped with modern raido naviation aids. And how the design of aviation engines has changed and what strong and light materials have replaced fabric and plywood from which airplanes were made at that time!

Let us take a look into the future of aviation--20 to 40 years ahead. What kind of aircraft will people of the 21st century fly on and what kind of fuel will be poured into the tanks of the aircraft of the future? Based on the research and developments which scientists are conducting today, it may appear as follows:

Various types of composites--boron-carbon, boron-epoxy and others--find wide application in aircraft construction. They are not inferior to metals in strength and are much lighter than metals. Composites permit a reduction of aircraft weight by 30-40 percent and this in turn provides a significant saving of scarce aviation fuel.

New types of flight vehicles, for example, air-cushion craft will appear. These aircraft will seem to slide along on a high-pressure air cushion. Air-cushion craft can traverse water spaces and fly over land where it is unprofitable to construct roads and rail lines. Air-cushion craft are economical, consume less fuel and are rather simple to control.

Obviously, aviation will partially convert to new types of fuel at the end of this century. Synthetic fuel based on coal and shales will apparently be used initially. Liquid hydrogen, the reserves of which are practically unlimited, is also very promising. Hydrogen is attractive due to the fact that it absolutely does not pollute the atmosphere and yields two to three times more thermal energy than aviation kerosene when burned. It is interesting that modern aviation engines hardly have to be modified for the new fuel.

We are now very close to using nuclear fuel not only in electric power plants and on ships, but in aviation as well. The time is not far off when unique "nuclear tugs" will appear in the sky. An aircraft with a nuclear power plant will fly a specific circular route. An ordinary aircraft, taking off from an airfield, hooks up to the "tug," makes the entire trip without using fuel and uncouples at the necessary point and goes in for a landing. It is interesting that a "nuclear tug" can fly for several years without landing. After all, it does not have to be refueled and the replacement crews will fly up together with passenger aircraft.

Turboprop engines are being improved constantly. Propellers with high efficiency installed on heavy mainline aircraft will permit a 20 to 30 percent fuel saving and will significantly reduce noise.

Unfortunately, it still happens that travel to the airport requires as much time as the flight itself. Therefore, the problem of developing high-speed ground transport linking the city and the airport is very acute. Engineers are advancing to the forefront the idea of developing monorail roads and pipeline transport where electromagnets or compressed air will be used.

Even development of new, highly economical aircraft engines cannot fully resolve the problem of fuel and lubricant conservation. Much fuel is expended on testing engines after they have been replaced, on bench tests and various types of repair work. Devices have already been developed which permit restoration of the properties of aviation oils and cleaning of them. Scientists are working on development of lubricating materials which do not have to be replaced during the entire engine lifetime.

Talking about aviation of the 21st century, one cannot help but mention engines that operate on solar energy. This is no fantasy. An experimental aircraft operating on solar cells already exists. The sun may provide inexpensive and clean energy of enormous power. Obviously, scientists will find more effective means of converting it by the year 2000. Aircraft and helicopters operating on solar cells will then completely force out existing types of aviation technology.

The reduction of noise made by aircraft engines is a problem which must be resolved by the beginning of the 21st century. This in no way means that aircraft will become noiseless. But airfields will be constructed from materials which reduce to a maximum the effect of noise on man. Extensive use of fiberglass, plastics and other new materials will make air terminal buildings impenetrable to noise.

6521
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AIR

CUBAN-SOVIET AVIATION COOPERATION REVIEWED

Moscow VOZDUSHNYY TRANSPORT in Russian 5 Feb 81 p 3

[Interview with general representative of the Cubana de Aviacion Company Luis Copo Quinenes in the USSR by I. Grigor'yev]

> [Text] The network of Aeroflot Air Lines is becoming thicker and thicker on the world map. Aircraft with the Aeroflot emblem now fly to 85 countries and 105 major cities of the world. The international links of Soviet aviators are expanding. The aviation companies of CEMA members are reliable partners of Aeroflot.

[Question] What role, in your view, belongs to the civil aviation of our countries in relations between the Soviet Union and Cuba.

[Answer] The circumstance that our fraternal countries are separated by many thousands of kilometers indicates that a very important role belongs to air communications.

But first a little history. Civil aviation in Cuba began in October 1929 when the Cuban National Aviation Company was founded.

A qualitatively new stage in the history of Cubana de Aviacion began after the victory of the 1959 revolution.

The fact that the Cubana Company has become the leader among the air lines of Latin America, having established regular air traffic with the socialist countries--flights from Havana to Prague began in February 1961, should be included among the honors of our aviation company.

[Question] We recall how the air bridge between our countries was constructed. The first trans-Atlantic flight of an Aeroflot aircraft was dispatched from Moscow to Havana on 7 January 1963. IL-62M aircraft of Aeroflot now fly to the capital of Cuba up to 10 times per week on several routes.

Comrade Copo, how do you evaluate the development of relations in the field of air traffic between our countries at present.

[Answer] Extremely highly. With regard to the air bridge between Moscow and Havana, it long ago rightfully became a symbol to the world.

Since 1961 we have begun to operate Soviet aviation equipment--first IL-14s, then IL-18s and AN-24s and then YaK-40s and IL-62s, on which Cuban pilots began to develop transatlantic routes. And the Cubana aircraft fleet was quite recently supplemented with TU-154 aircraft, which we propose to use both on internal and international lines.

Aircraft under the Cuban flag now fly to 14 countries, carrying approximately 200,000 passengers annually.

[Question] But Cubana is not only transport aviation. Obviously, servicing of sectors of the national economy are also of no less significance for the company.

[Answer] Undoubtedly. The organization of large state farms and cooperatives after the revolution presented the opportunity for extensive use of aviation.

Subdivisions of agricultural aviation render great assistance to the national economy. And AN-2M aircraft have been very suitable here.

[Question] As is known, the Republic of Cuba is a full and equal member of the Permanent Committee of CEMA on Civil Aviation. What does participation in the council for mutual economic assistance provide to Cuban pilots?

[Answer] Cuban specialists participate in discussion of practically all questions which are considered at meetings of the Permanent Committee of CEMA on Civil Aviation and in working out long-term programs of cooperation.

Here is just one example. Before we acquired IL-62 aircraft flying on Havana-Madrid-Berlin-Prague routes, Cubana and Aeroflot operated this route jointly--the crew was Soviet and the aircraft flew under the Cuban flag. And the experience acquired by us during this cooperation helped our growing aviation very much.

Training of highly qualified personnel is of exceptionally important significance to Cuban aviators. Our pilots, engineers, technicians and specialists of the ground services acquire theoretical and practical skills in the academic institutions of the USSR.

We are now faced with new tasks posed by the Second Congress of the Cuban Communist Party to the country's aviators. These are opening new air routes, the maximum use of commercial loading of aircraft, further development of the technical base and excellent passenger service.

6521
CSO: 1829

AVIATION SERVICE EXPANSION IN SIBERIA, FAR EAST

Moscow VOZDUSHNYY TRANSPORT in Russian 14 Feb 81 p 1

[Article by S. Chugayev (Novosibirsk): "The Role of Aviation in Developing Natural Resources Is Growing"]

[Excerpt] GosNIIGA [State Scientific-Research Institute for Civil Aviation] scientists have done much comprehensive work, together with their colleagues from the scientific-research institutes NETs AUVD, GosNII ERAT, GPINII, Aeroproyekt, VNII PANKh and others, in close contact with the main offices of the civil aviation administrations and local party, soviet and planning organs of krays and oblasts of Siberia and the Far East.

All this has enabled a plan to be worked out for the balanced development of technical resources for these civil aviation administrations--the airplane and helicopter fleet, the network of airports and airfields, aviation equipment bases, GSM [fuels and lubricants] facilities, means for mechanization, and so on, and of social matters, which include the construction of housing, the improvement of medical support and expansion of the network of children's and preschool institutions and facilities for cultural and educational purposes.

A broad discussion of the future of Siberian and Far East aviation is going on today in aviation enterprises. A day or two ago a conference was convened in Novosibirsk under the chairmanship of First Deputy Minister of Civil Aviation A. Nazarov, at which recommendations for "The Basic Directions for the Economic and Social Development of the West Siberian Civil Aviation Administration During 1981-1985 and Prior to 1990" were examined.

In the next decade civil aviation of West Siberia will continue to develop at a rapid pace. The number of passengers and the amount of freight hauled by it will increase, and the amount of work on PANKh will rise. The airplane and helicopter fleet will be changed qualitatively. Already during this five-year period the Tolmachevo Aviation Enterprise is receiving the first Il-62 airplanes, and in the near future the standard bearers of Aeroflot--the Il-86--will be received here. The L-410 UVP and An-28 airplanes and new helicopters will go to local air routes. The network of the region's airports will grow and will be improved. It is planned to build a new airport complex in Omsk and to expand and rebuild the airports of Novosibirsk, Tomsk, Barnaul and Kemerovo, as well as to build hard-topped runways in oilfield-worker cities and settlements--Strezhevoy, Parabel', Srednyy and Novyy Vasyugan, in Novosibirskaya Oblast and Altayskiy Kray and in other regions.

All this comprises a broad circle of complicated questions that West Siberian civil aviation faces, and they cannot be solved without active, effective collaboration with party and soviet organs, local scientific institutions, subcontracting ministries and agencies, and such main users of civil aviation as the Ministry of Petroleum Industry and RSFSR Ministry of Geology. It is not accidental, therefore, that, in addition to members of the Board, chiefs of leading MGA [Ministry of Civil Aviation] administrations and of scientific-research institutes, supervisors of workers of the West Siberian administration, prominent members of the Siberian Division of the USSR Academy of Sciences--Academician A. Aganbegyan and Chief Geologist of Siberia and corresponding member of the USSR Academy of Sciences V. Surkov, party and soviet supervisors of West Siberian krays and oblasts, and representatives of client organizations took an active part in the conference's work

The Second Secretary of the Novosibirskaya Oblast CPSU Committee V. Bokov, Secretary of the Tomskaya Oblast CPSU Committee A. Bortnikov, Deputy Chairman of the Altayskiy Kray Ispolkom G. Peregudov, Deputy Chairman of the Kemerovskaya Oblast Ispolkom V. Churbin, and Deputy Chairman of the Omskaya Oblast Ispolkom V. Bryukhanov took part in the conference's work.

A long-range plan for collaboration in the area of developing the region's civil aviation during the next decade which the conference called for received general approval and will be made the basis for the prescribed five-year plan for the West Siberian Civil Aviation Administration.

11409
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INSTITUTE'S WORK ON TRAINING DEVICES, OTHER TASKS NOTED

Moscow VOZDUSHNYY TRANSPORT in Russian 14 Feb 81 p 1

[Article: "A High Award to the Scientists"]

[Excerpt] Yesterday Deputy Minister of Civil Aviation A. Razumovskiy presented chief of GOSNII GA [State Scientific-Research Institute for Civil Aviation] R. Sakach a challenge Red Banner and a memorial emblem at a ceremonial occasion in the institute's assembly hall.

First Secretary of the Leningradskiy Rayon Party Committee P. Afanas'yev warmly congratulated the institute's collective on its great labor victory and wished the scientific workers further successes in the matter of developing and improving domestic aviation equipment.

At the conference the scientists adopted increased socialist commitments for 1981. In particular, thanks to the institute's developments, this year new equipment for the technical servicing of airplanes, which will yield a total economic benefit of about 800,000 rubles, will be tested and introduced into production. Instructor crews will undergo training for flights on Il-62M, Tu-154B and Tu-134A airplanes in accordance with category 2 of ICAO [International Civil Aviation Organization]. Moreover, 860 tons of fuel will be saved by raising the quality of training for flights.

11409
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IL-86'S FUTURE DESTINATIONS CITED

Moscow IZVESTIYA in Russian 28 Dec 80 p 6

[Article by V. Belikov (Tashkent-Moscow): "A Flying Home"]

[Excerpt] The gigantic Il-86 airplane should "go to work" at Aeroflot shortly before midnight--dispatched with its first passengers from the capital in Tashkent.

"Flight No 667 is being flown on Wednesdays, Fridays and Sundays. The time of flight is 4 hours...." We heard this report about our flight over the airport radio. The winged vehicle for 350 passengers, which had been represented a few years ago as fantastic, has become for Aeroflot workers a common matter.

Some of the future routings of the Il-86 were enumerated at the press conference. These are flights that connect Moscow with Leningrad, Kiev, Riga, Tbilisi, Baku, Yerevan, Rostov-na-Donu, Odessa, Sverdlovsk, Novosibirsk and the resort cities of Sochi, Mineral'nyy Vody and Simferopol'. The appearance of this airliner is the start of a new era in the development of air transport.

11409
CSO: 1829

IMPROVEMENTS IN USE OF IN-FLIGHT RECORDERS URGED

Moscow VOZDUSHNYY TRANSPORT in Russian 22 Jan 81 p 3

[Article by Ye. Provorov, deputy chief of the administration, Kiev, under the heading "Safety--ABC's of Flight": "Electronic Crew Member"]

[Text] One way to raise efficiency in the aviation industry is practical use of flight data. While magnetic recorders (the MSRP [in-flight recorder]-12 and MSRP-64) and automated processing systems were originally used only to monitor flight parameters and observe the technical status of the flight data collection equipment itself, they are now coming into use as a reliable factor in assessing the technical status of aviation equipment. There is no need of mentioning the importance of this task; behind it, actually, are many indicators of the collective's labor. Therefore, the experience gained in the operating enterprises as well as developments by our ministry's scientific research institutes and VUZ's are of increasing value.

The scientific and practical conference with the theme "Interpretation, Analysis and Practical Use of Flight Information" held at the Kiev Institute of Civil Aviation Engineers became the next step in generalizing experience. Interest in the measure can be judged by these figures: 230 specialists from 70 enterprises and VUZ's of the ministry and other ministries and departments participated. In the plenary session and sessions of the three working sections, 40 papers on the topical questions of interpretation of flight information were read.

The payoff from magnetic recorders is widely known today: the number of deviations and violations during flights has been sharply reduced, and discipline has been raised not only with flying personnel, but also with engineers and technicians during engine tests on the ground. Programs have been developed to monitor fuel consumption on Tu-154 aircraft that enable a tangible contribution to the campaign to save fuel and energy. Other positive aspects extractable from processing flight information can be listed too. But there are also problems.

Up to now, our "small" yet very numerous equipment--the An-2 and the Mi-2 and Ka-26 helicopters--does not have any recorder although one exists. This is the MSRP MVL [expansion unknown]. Its operational tests were delayed and introduction "got hung up" for obscure reasons. Analogy of the effect in transport aircraft leads to the belief that recorders would be just as useful in PANKh [expansion unknown] aircraft.

In our view, the list of parameters recorded by existing systems has to be reviewed.

The fact is that there are now quite a few technical innovations based on the latest scientific principles that we are not yet making use of. And applying them as data sensors, for example, to monitor the status of an engine or its assemblies would promote further improvement in flight safety.

And, finally, the problem retarding the work of the flight data processing sections has to be resolved. The situation here is this: on the one hand, the section interpretation capabilities have grown through introduction of automated processing. But on the other hand, the data storage devices are yesterday's technology: they are unwieldy and installed in sections of aircraft that are difficult to access. And the brief airport parking time, of course, is not enough to remove the used one and install a replacement due to the high labor-intensiveness of these operations. There is reserve here for raising flight quality and a light cassette storage device, that is certainly not so complicated to develop, could translate it into reality.

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AIR

INSTITUTE'S WORK IN ENGINE DEVELOPMENT NOTED

Moscow VOZDUSHNYY TRANSPORT in Russian 22 Jan 81 p 3

[Article by L. Ol'steyn, department chief, TsIAM [Central Scientific Research Institute, Order of Lenin, of Aircraft Engines imeni P. I. Baranov], doctor of engineering science, professor, laureat of the USSR State Prize: "Engines for the 21st Century Are Being Developed Today: Science into Practice"]

[Text] The Institute of Aircraft Engines, which was soon named after P. Baranov, a prominent leader in the Air Force and aviation industry, was organized a half century ago by decision of the USSR Revvoyensovet [Revolutionary Military Council] on the base of the power plant department of the Central Aerodynamics Institute, the aviation department of the Scientific Motor Vehicle Engine Institute and the design bureau of the Plant imeni M. Frunze. A little later, the new scientific institute was renamed the Central Institute of Aircraft Engines (TsIAM).

Severe necessity led to the establishment of the institute. Powerful engines were needed by the aviation of the new republic of soviets. The organization of this scientific center and the intensive development of the aircraft engine industry that followed became a distinctive sign of the country's industrialization.

The new institute which united outstanding Soviet experts and designers such as B. Stechkin, A. Mikulin, V. Klimov and S. Tumanskiy was charged with all questions of experimental engine building: development, design, construction, perfecting experimental engines and putting them into series production. One of the first problems that had to be solved was the development as soon as possible of a high-power engine to operate at high altitude. It was indeed successfully solved. The M-34 engine developed by A. Mikulin and its modifications were installed, in particular, in ANT-25 aircraft that made historic flights in the thirties. Forced modifications of these engines during the Great Patriotic War were installed in the MiG-3 fighters and the famous Il-2 attack aircraft. The institute was awarded the Order of Lenin in 1945 for outstanding success in scientific research and development of aircraft piston engines.

Intensive development of jet aviation began in the mid-forties. In these years at the institute, based on the efforts of I. Meshcherskiy, N. Zhukovskiy, K. Tsiolkovskiy, F. Tsander and B. Stechkin, basic research was done on a number of new scientific directions, and the theory of operation in gas turbine engines and their elements was evolved. We all remember how in 1956, when few believed in the possibility of employing jet engines in civil aviation, the multiseat, fast Tu-104 began transporting passengers; it was the Aeroflot flagship for many years.

A modern jet engine combines the best achievements of many sciences and related sectors of industry, and the development of each new model in turn entails a complex of new complicated scientific and technical problems. They are solved over many years by large teams of scientists, workers and engineers. The quality of a new aircraft, its earning capacity and service life largely depend on the success of their efforts. Therefore, the role of science, and the Central Institute of Aircraft Engines in particular, that is called upon to not only shape the engines of the future, but also to develop the methodology to create them and determine the properties they must have, grows with each year.

The first and main concern of developers of new engines is raising their efficiency. After all, the cost of fuel is now about 60 percent of the cost of an aircraft's entire life cycle. This problem is solved in many ways. One is a high degree of bypass, as was done for example on the D-36 engine installed in the Yak-42. In this case, the air flow through the fan is more than six times that through the inner duct. An economic engine must also have high aerodynamic qualities. The solution to all these problems is preceded by profound scientific research which is the major task of the institute.

The increase in intensiveness and scale of utilization of aviation equipment, and the complexity and cost increase in manufacturing gas turbine engines require, correspondingly, an increase in their efficiency. All this has led to the emergence of a progressive system of operation of aircraft engines in regard to their technical condition. Working out the questions associated with this problem and their scientific support are also within the scope of the institute's task. The institute also pays much attention to solving problems of reducing the noise of aircraft engines and the discharge of harmful substances into the atmosphere. Today practically all Aeroflot aircraft meet the internation standard on noise level. New aircraft are being developed with due regard for even more stringent restrictions on noise and reducing atmospheric pollution.

Together with the experimental design bureau and in close contact with civil aviation organizations, we are working today on the development of aircraft engines for the aircraft that will carry passengers at the end of this century--the beginning of the future. The institute's collective is now in a time of creative maturity. Young scientists are working together with those of the older generation. The institute has a modern computing center and a good production and experimental base. All this makes it possible to solve the most complex scientific problems.

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AIR

FURTHER WORK ON IMPROVING YAK-42

Moscow GRAZHDANSKAYA AVIATSIYA in Russian No 2, Feb 81 pp 10-11

[Article: "The YaK-42 Brings Life to the Air Routes"]

[Excerpts] The new YaK-42 airliner is being operated on routes near mainlines up to 1,800 kilometers long and is designed to transport 120 passengers. Its normal commercial load is 10.5 tons and maximum flight range (with 75 passengers) is 3,000 kilometers.

Three D-36 turbojet engines designed by V. A. Lotarev are installed on the YaK-42. They have a large degree of two-circuit operation--5.6. The engines are distinguished by low fuel consumption and low noise and vibration levels. Their location in the rear part of the fuselage made it possible to create additional comfort for passengers and to achieve high aerodynamic efficiency of the wing.

Working on the YaK-42, we attempted to utilize the best scientific and technical advances of the past few years in its design in the field of aviation engineering, technology and radio electronics and to develop a simple, reliable and efficient machine. No less attention was devoted to high flight safety, which is provided primarily by the fact that the aircraft, having three engines and high power-to-weight ratio, can continue cruising speed upon failure of one engine and can make a normal landing upon failure of two engines.

Careful analysis of the operating conditions, calculations and numerous aerodynamic investigations on models made it possible to determine the optimum combination of parameters, to find an efficient shape and to select the dimensions of the wing, fuselage and various units of the YaK-42.

The most important properties of the aircraft which determine all its flight data are the specific load on the wing and the power-to-weight ratio. The specifics of operating the YaK-42--short routes, frequent takeoffs and landings and the use of runways whose length does not exceed 1,800 meters--determined the selection of comparatively low specific load on the wing (approximately 350 kilograms per square meter) and the high power-to-weight ratio (exceeding 0.36). First, this makes it possible to achieve a high rate of climb and second to improve the takeoff-landing qualities by reducing landing approach speeds and separation from the runway upon takeoff. Actually, the approach speed of the YaK-42 is only 210 kilometers per hour--it is considerably lower than that of other similar aircraft.

When designing the wing for the YaK-42, high aerodynamic efficiency in the cruising mode of flight, high maximum lift coefficient during approach and sufficient reserve of longitudinal stability at large angles of attack, including critical angles, had to be provided. The configuration helped to solve those problems--the swept wing was compiled from a set of profiles having aerodynamic and geometric twist. It was also possible in this case to avoid the difficulties inherent to swept wings. Powerful, efficient and at the same time relatively simple mechanization, consisting of leading-edge slat, trailing-edge flap and interceptor which is automatically lowered at the moment the wheels touch the ground, was used in the design. The trailing-edge flap combines simplicity and originality--it is the recoil type with fixed deflector. Upon deflection of the trailing edge flap, two slits are formed--between the wing and the deflector and also between the deflector in the main part of the trailing-edge flap.

All the adopted measures ensured that a high maximum value of the lift coefficient was achieved--it exceeds 2.7. And wind tunnel tests of models and extensive flight tests confirmed the adequate stability reserves and the good controllability characteristics of the YaK-42 in the entire necessary range of angles of attack.

The characteristic feature of the aerodynamic configuration of the aircraft is the use of a special asymmetrical stabilizer with the edge deflected upward. As on all modern aircraft, pitch control and the longitudinal balancing of the YaK-42 are accomplished by an elevator and rotary tailplane. However, the asymmetrical profile makes it possible to achieve large angles of deflection (up to -12° of the tailplane during takeoff and landing and thus to increase its efficiency, providing a sufficient moment for balancing in takeoff and landing modes without increasing the area of the horizontal tailplane.

Components that determine in one way or another the simplicity and reliability of the design are used in practically every system and in all units of the aircraft. For example, take the control system. It is the powered type on most Soviet and foreign passenger aircraft. The use of power actuators leads to a complicated and more expensive design. Therefore, it was decided to do away with boosters, although this required careful debugging of the entire system and selection of the optimum aerodynamic compensation of the control surfaces.

One of the main criteria by which aircraft economy is evaluated is fuel economy. The problem was solved in two ways: first, by the use of highly efficient engines (the D-36 has record low specific fuel consumption in the cruising mode--only 0.64-0.65 kilograms per kilogram of thrust per hour); second, by improving the local aerodynamics of the aircraft, which required many wind tunnel tests and many flight tests. As a result, the best shapes of the wing "tips" and of the vertical tailplane, the "fillets," fairings, landing gear doors and so on were selected. All these seemingly not too complicated improvements together produced an appreciable increase of aerodynamic efficiency. Special checks of fuel consumption and flight range were made during state trials, which confirmed the calculated data: fuel consumption does not exceed 34 grams per passenger-kilometer; the turbojet of the YaK-42 is at the level of the best turboprop aircraft by this indicator.

It is especially important to provide minimum structural mass when developing a highly efficient transport aircraft. According to the tradition of our OKB

[Special design office], development of any assembly or part is preceded by careful weight analysis of different versions. Preference is usually given to the simplest versions which usually provide the least mass. The weight improvement of passenger aircraft is evaluated by the mass per passenger. It comprises approximately 200 kilograms for the YaK-42, which is considerably lower than that of other passenger aircraft.

Increased comfort for passengers is a compulsory requirement placed on a modern passenger aircraft. The YaK-42 fully meets this requirement. It is equipped with a powerful on-board air conditioner which delivers 4,500 kilograms of fresh air per hour to the cabin. The air conditioner is switched on before the engines are started and develops a microclimate in the passenger requirement not dependent on external conditions even on the ground. The noise and vibration levels are low and fully meet the most exacting standards.

Two built-in gangways in the tail and nose sections of the fuselage accelerate passenger embarkation and debarkation. The wardrobes and toilets are located directly near each gangway.

Baggage is arranged on the YaK-42 in standard aviation containers in compartments under the floor of the cabin. Loading and unloading of the containers is mechanized. The time required to prepare the aircraft for the next takeoff is thus reduced. Centralized refueling of the aircraft with fuel, oil and special fluids serves the same purpose.

A great deal of attention was devoted to decorating the interiors. They are decorated in light, restful tones. Modern lightweight, strong, nonflammable and nontoxic materials were used for the upholstery.

Development of the crew cabin, which meets the most rigid requirements of ergonomics and engineering aesthetics, required no fewer efforts from the designers, artists, pilots and other specialists. A crew of only two persons is provided by the technical and engineering requirements for the YaK-42. Therefore, it was necessary to configure the cabin and to arrange the equipment, instruments and control members so as not to overload the pilots and to create the best working conditions for them at all stages of the flight. And this problem was resolved successfully: a cabin was created which meets in the best manner all the posed conditions and requires minimum energy and time expenditures on control of the aircraft.

Piloting processes had to be automated to the maximum to ensure control with a reduced flight crew. Therefore, the navigational equipment on the YaK-42 includes an on-board digital computer which operates on the principle of self-contained heading-doppler dead reckoning. It thus performs the functions of a navigator: it continuously calculates the aircraft's position, the wind velocity and direction and the distance and travel bearings to the selected flight points.

The aircraft is also equipped with a set of the usual small radio navigation aids, which permits the use of ground aids both on air lines inside the Soviet Union and on international lines and also permits an automated landing approach according to ICAO category 2.

The YaK-42 has emerged on main passenger lines. But intensive work continues in the laboratories of the OKB to confirm the specific specifications of the designated service life of 30,000 flight hours. Service life tests of the numerous systems, units and mechanisms of the aircraft are conducted on special benches, the effect of stresses in the air frame components are measured and refined and their durability is checked. Ways of improving the machine are planned at the same time.

In our further work on improving the YaK-42, we count on extensive use of its operating experience on Aeroflot routes and of taking into account the comments and desires of the crews and engineering staff and also of numerous passengers.

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6521
CSO: 1829

AIR

ADDITIONAL AIR ROUTES IN TURKMENIA

Ashkhabad TURKMENSKAYA ISKRA in Russian 8 Feb 81 p 2

[Article by V. Volkov, chief of the Turkmen Civil Aviation Administration: "The Republic's Air Routes"]

[Excerpts] During the last 5-year period the republic's air transportation underwent new development. The Ashkhabad, Krasnovodsk and Tashauz airports underwent reconstruction, new complexes were built, and plant and equipment were considerably strengthened. The comfortable Tu-154 aircraft has been given its pass. This many-seated airliner now flies from Ashkhabad to many of the country's cities, as well as to the oblast centers of Krasnovodsk and Tashauz, and from there to Moscow. Reconstruction of the Chardzhou Airport will be completed before the party congress opens. In the first year of the 11th Five-Year Plan the people of the city on the Amu Dar'ya will already be able to fly to Moscow on the Tu-154.

Construction of the terminal at the airport in the republic's capital will begin in 1983. It is designed for the arrival and departure of 1,600 passengers per hour. Electronic information systems and automatic air conditioning systems will be installed in the waiting rooms. Provision is being made to open PTT [postal, telegraph and telephone] offices, consumer services and stores in it.

The republic's pilots are continuing to master the Tu-154 aircraft, which in time will displace the Il-18 in our fleets. Even in 1981 this liner will be used to open the air route to Anapa and Leningrad. It will be possible to fly on a Yak-40 from Gaz-Achak via Ashkhabad to Baku and on an An-24 from the capital of the republic to Tedzhen. New equipment is expected to arrive--the Yak-42 and An-28 aircraft. The Mi-2 helicopter will be replacing the Mi-1, the workhorse of the Kara-Kum desert.

7045
CSO: 1829

AIR

CONSTRUCTION OF NEW MINSK AIRPORT REPORTED

Minsk ZVYAZDA in Belorussian 7 Feb 81 p 1

[Article by U. Hoytan: "Capital Airport"]

[Excerpts] The smooth white field seems to go on and on. One can barely see off in the distance a crenellated wall of forest. The republic's largest construction project is in progress at this site -- the Minsk Airport. And although it is quite a distance to town -- 34 kilometers -- passengers will not be inconvenienced: fast buses will deliver them to their destination within minutes.

The airfield's runway is like a sword on a shield, except in place of a steel blade it is a concrete strip extending several kilometers.

For an instant the airfield appears as it will in the not-so-distant future. A mighty roar wells up at regular intervals. Another jet passenger liner taxies out to the active. Nimble Tu-154s, elegant Il-52s and Yak-42s, and the first Soviet airbuses, the Il-86. There are more aircraft than one can count, bearing the markings of Aeroflot and many foreign airlines. The new airport will be able to accommodate practically all aircraft presently in existence, including giant aircraft such as the Antaeus.

The traffic handling capacity of this airport, which will be one of the country's biggest and most luxurious, will increase severalfold. While the present Minsk Airport handles up to 500 passengers an hour, the future airport will be able to handle 1800. Already today the Minsk Airport offers air service to more than 70 Soviet cities. Future air service will extend even further. Nonstop flights will link our republic capital with Krasnoyarsk, Khabarovsk, and many other distant cities.

"The flight will be delayed until.... The airport is below minimums." How familiar these laconic words are to air travelers. They mean long, tedious hours of waiting. Postponement of get-togethers with friends, relatives and loved ones, as well as delays in reaching one's work or vacation destination, wherever one is in a hurry to reach. Therefore minutes of delay seem like hours, and hours seem like days.

Unfortunately the weather is certainly a factor, especially at small airports which are not equipped with the necessary navaids and facilities. The most advanced surveillance radar, high-intensity approach and runway lights, and air traffic control facilities which will be installed at the new airport will reduce severalfold the negative effect of weather on meeting flight schedules. Aircraft will be able to take off and land in an overcast down to 60 meters.

Architects Yu. P. Grigor'yev, B. M. Larchanka, and U. A. Sirata of the Minskproyekt Institute, and chief engineer L. B. Valchetski worked on the unique airport design. In addition, specialists from the Leningrad Lenaeroproyekt Institute worked on the design.

The new airport has been under construction now for several years at the site near Smolevichi. Two large construction organizations -- the Beltransstroy Trust and the Minskpromstroy Construction Production Association -- are working on the project. The construction workers successfully accomplished the target of the last five-year plan. In spite of certain difficulties connected with the lack of requisite approach roads and site clearing, runway construction was completed on schedule. Runway construction involved removing approximately 3.5 million cubic meters of dirt and laying tens of thousands of cubic meters of concrete. Construction on the air terminal building is proceeding at full speed. It is rising higher and higher. Time waits for no man, and therefore construction workers, erection crews, and road construction workers are laboring conscientiously.

3024
CSO: 1829

AIR

BRIEFS

NEW TU-154 SCHEDULES--by A. Samoylik, instructor in the OPVR [department of political-educational work] of the Tyumenskoye Civil Aviation Administration--A TU-154 aircraft has been flying the Tyumen'-Novyy Urengoy-Moscow route since the first days of the new year. The maiden trip on this liner was made by the crew commanded by V. Smirnov, pilot first class. At the finish of the five-year plan, the Tyumen' aviators put the modern aircraft on the three busiest routes. And in the first half of 1981, TU-154 aircraft will also link the capital of this oil region with the country's southern cities--Sochi, Simferopol' and Tashkent. The rapid development of air transportation in Tyumenskaya Oblast is illustrated by the fact that while 3.2 million people used air services here in 1975, there will be 5.6 million passengers in the first half of the 11th Five-Year Plan. [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 22 Jan 81 p 4] 8545

PROBLEMS IN PERM'--by I. Gubaydulin, Aeroflot veteran, Perm'--Discussion of the CPSU Central Committee draft shows that Perm' aviators for local airlines are full of determination to convert the party's far-reaching plans into concrete deeds. However, the difficulties preventing the collective from climbing confidently must be mentioned too. One is the unsatisfactory supply of spare parts for the MI-2 helicopters operating for the needs of the national economy. A substantial part of the fleet of these machines has been idle now for several months due to depletion of reserves of rotor blades and freewheeeling clutches. Therefore, in the discussions of all meetings the /attention of the MGA [Ministry of Civil Aviation] has been called to the need to put the supply of spare parts for MI-2 helicopters and other equipment in order./ [boldface] Suggestions have also been made to remodel a number of the peripheral airports for local airlines that do not meet today's requirements and to complete in 1981 the delayed construction of the airport at Berezniki--a major industrial and cultural center in the Western Urals. The aviators are also concerned because there is not yet one hard-paved landing field in Permskaya Oblast for conducting air-chemical operations. [Excerpt] [Moscow VOZDUSHNYY TRANSPORT in Russian 22 Jan 81 p 2] 8545

PLANS FOR IMPROVEMENT--The CPSU Central Committee draft for the 26th party congress stresses the need to substantially improve passenger service in all types of transportation. To this end, plans call for opening 20 new air routes and switching 30 air routes to new aircraft just in the first year of the 11th Five-Year Plan. In all, 73 percent of passengers will be carried in IL-62, TU-154 and TU-134 aircraft. Under plans approved by Aeroflot, at least 3 million people and 100,000 men of the student construction detachments will be carried on favorable terms. To improve flight regularity, 75 percent of crews will be trained for the minimum of first category in the IL-62M and TU-154 aircraft. [Excerpts] [Moscow VOZDUSHNYY TRANSPORT in Russian 22 Jan 81 p 2] 8545

NEW TU-154 RUN--by V. Kurasov, IZVESTIYA special correspondent, Magadan--Following the IL-62M, a TU-154 that made the Moscow-Magadan run for the first time examined the new complex of Magadan airport. The runway and air-ground services passed the examination with an "excellent." The Leningrad-Omsk-Bratsk-Yakutsk-Magadan-Petropavlovsk-Kamchatskiy air route was inaugurated as of the first days of the new year. [Text] [Moscow IZVESTIYA in Russian 6 Jan 81 p 3] 8545

AVIATORS PROPOSE IMPROVEMENTS--Aviators propose centralized control of international air communications. Making more active use of IL-76 cargo aircraft both on domestic and international routes, after providing complete containerization of shipments. In the 11th Five-Year Plan, mechanizing fully the process of materials handling for the AN-12 and IL-76. Starting work on automation of these processes at the airports in Moscow and capitals of the union republics. Developing effective measures to reduce fuel consumption per unit of traffic output on the IL-62 and IL-76. [Excerpt] [Moscow VOZDUSHNYY TRANSPORT in Russian 27 Jan 81 p 2] 8545

NEW AIR ROUTES--The Krasnoyarsk Civil Aviation Administration collective has pledged to open new air routes with TU-154 aircraft from Krasnoyarsk to Magadan, Perm' and Yakutsk; with Yak-40 aircraft—Abakan-Zaozernoye, Kyzyl-Irkutsk, and Kyzyl-Frunze; and to introduce 22 air routes with L-410 aircraft. The pledges were discussed and adopted by the collectives of the air enterprises of the Krasnoyarsk Civil Aviation Administration. [Excerpts] [Moscow VOZDUSHNYY TRANSPORT in Russian 29 Jan 81 p 1] 8545

NEW L-410 SERVICE--Several more runs have been added to the aircraft traffic schedule for the Kamchatskoye Air Enterprise: the L-410 has begun making regular flights. Peninsula inhabitants sized up the new machine. The plane has shortened runs on takeoff and landing and can fly in all weather, day or night. The comfortable cabin seats 15. The elegant "novice" replaces the AN-2 workhorse. In the photo: [not reproduced] an L-410 prior to takeoff. (TASS Pictorial Review). [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 3 Feb 81 p 1] 8545

FUEL CONSERVATION PROGRAM--The CPSU Central Committee draft for the 26th congress calls for saving 160-170 million tons of standard fuel for the five-year plan. In 1981, our sector must yield absolute savings of aviation kerosene in transportation operations on a scale of at least 0.5 percent relative to the maximum. To this end, the most advantageous modes of climbing and descending are being developed for the IL-76T, IL-86 and YAK-42. Flight techniques in cruising speed modes close to minimal fuel consumption for the IL-76T, YAK-40 and AN-24 will make it possible to achieve considerable savings in fuel. Rectified sectors of air routes and the most economical schemes for descent and the landing approach have to be used continuously for scheduled aircraft flights. Air enterprises have been given the task of reducing comsumption in 1981 of boiler-furnace fuel and petroleum products on a scale of up to 5, and electric and heat up to 3 percent. [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 29 Jan 81 p 2] 8545

NEW SOUTHEAST ASIAN ROUTES--by V. Sopolev, engineer, Khabarovsk--The new route of Moscow-Khabarovsk-Hanoi has appeared on the central schedule of this year. In the past, Khabarovsk Airport has already received IL-62M aircraft on the run from Moscow to the countries in Indochina. And now flights from the USSR capital to Hanoi, Ho Chi Minh, Vientiane and Phnom Penh through the regional center have become regular. They are made once a week by crews from the Moscow Transportation Administration. The airport in the city on the Amur has long serviced international routes. About 10 airlines use this airport, the largest in the Far East, and aircraft of the Khabarovsk Air Enterprise fly to Japan and the KNDR [Democratic People's Republic of Korea]. Establishment of regular communications with Vietnam, Laos and Campuchea via Khabarovsk will further expand ties between the Far Easterners and the Southeast Asian countries. [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 22 Jan 81 p 3] 8545

Il-86 PRODUCTION--The collective of the Voronezh Aviation Plant is on a precongress shockwork drive. This enterprise's departments are supporting series production of the Il-86 airplane, which can take 350 passengers on board. In the photo [not reproduced]: assembly is proceeding on the next Il-86--an airbus that soon will begin its work in the sky. [Text] [Moscow PRAVDA in Russian 16 Feb 81 p 1] 11409

YAK-42 CARGO RECORD--There were no passengers in the new Yak-42 passenger airplane when it was lifted into the air from a Moscow airfield by pilots Heroes of the Soviet Union V. Mukhin and E. Knyaginichev. Twenty tons of cargo had been placed in the airplane's cabin and baggage compartments. This flight lasted 30 minutes. Thus was established a new breakthrough for the amount of freight taken to an altitude of 2,000 meters for the class of service airplanes with a takeoff weight of less than 55 tons. Data from the flight were sent to the FAI [Fédération Aéronautique Internationale] to be recorded as a record. [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 12 Feb 81 p 3] 11409

NEW KARAGANDA AIRPORT FINISHED--Karaganda, 3 Jan 81. The Tu-154 airplane began to land at the airport of the coal city. Regular traffic by turbojet airplanes between Moscow and Karaganda has been opened. These airplanes have come here to replace the Il-18 Aeroflot veteran, having greatly reduced the flight time to the capital. This became possible after Karaganda's new Tsentral'nyy airport was introduced into operation. The runway built here can accept any type of aircraft. [Text] [Moscow PRAVDA in Russian 4 Jan 81 p 1] 11409

CSO: 1829

MOTOR VEHICLE

UKRAINE'S INSPECTOR NOTES CONDITION OF ROADS

Kiev PRAVDA UKRAINY in Russian 6 Dec 80 p 2

[Article by L. Prochkovskiy, Chief of Republic Inspection on Quality Control of Construction and Condition of Highways attached to Ministry of Highway Construction, Ukrainian SSR]

> [Text] Improve the quality of construction, repair and maintenance of roads, having devoted special attention to an increase of traffic safety (from draft of CPSU Central Committee to 26th Party Congress).

A reliable general state and republic highway system has been created in the republic and the network of oblast highways has been well developed. All rayon centers, supporting railroad stations in most oblasts and all central farmsteads of kolkhozes and sovkhozes have been provided with permanent transport links. More than 80 percent of the highways in the republic are now paved.

Construction and reconstruction of highways have been carried out intensively during the past few years with improved paving and wooden bridges have been replaced by reinforced concrete bridges. Significant volumes of work are being carried out on the Kiev-L'vov, Leningrad-Kiev-Odessa, Moscow-Khar'kov-Simferopol', Rostov-Odessa-Reni, Minsk-Zhitomir-Kishinev-Izmail and Kiev-Kovel' major highways. Bypasses around oblast cities and large industrial centers--Vinnitsa, Khmel'nitskiy, Khar'kov, Zhitomir and some others--are being constructed for through transport. So-called beet-carrying highways are being laid in Vinnitskaya and Khmel'nitskaya Oblasts--to ensure rapid export of raw sugar to the refining enterprises regardless of weather conditions.

The experience of the road builders of Rovenskaya Oblast, who, together with the timber management and trade workers, organized construction of special areas with wells and other elements of development, which creates the necessary conditions for drivers and passengers to rest, merits attention.

Highways are very expensive structures. Considerable state funds and material resources are expended annually on their construction, reconstruction and repair and on operational maintenance. Therefore, extending the service life of roads and providing their preservation and protection against damage and premature breakdown are a very important task. However, it is far from being solved in a proper manner everywhere.

Maintenance of many intrafarm roads of kolkhozes and sovkhozes, including paved roads laid during the past decade, leaves much to be desired. The pavement is ruined by heavy agricultural equipment, especially caterpillar-type tractors. And the tractors have to be admitted to these roads because the summer routes intended for agricultural machinery in the diversion strip are plowed under in most cases. There are many of these violations in Khmel'nitskaya, Ternopol'skaya, Kirovogradskaya and Nikolayevskaya Oblasts.

The highways in the beet-growing zone "operate" under severe conditions. The most intensive freight traffic here is in the fall during harvest and unstable weather. Enormous bottlenecks form on many routes, which frequently creates an emergency situation and leads to motor transport accidents. The trucks must be towed by tractors and very discernible damage is inflicted on the asphalt paving. It is time for local farms to concern themselves with construction of the corresponding accesses to plantations or of overpasses.

During the past few years our roads have become not only more reliable but better looking over a significant length due to green plantations. During the winter season trees act as a snow-protective service, permitting a saving of considerable funds and fuel-energy resources. According to materials of the Voronezh Wood Technology Institute, the total saving from the effect of a hectare of forest strips along highways comprises 405 rubles annually.

But roadside plantations require reconstruction in some places. This must be done by a well-thought-out plan designed for many years in the future by making use of the recommendations of specialists. Unfortunately, cases are known (in Poltavskaya, Ivano-Frankovskaya, Khersonskaya and Khmel'nitskaya Oblasts) when green plantations are cut down without the authorization of the appropriate bodies. Not only the workers of road organizations and of state highway inspectorate, but also the ispolkoms of rayon and rural Councils of Working Peoples Deputies should speak out seriously here.

6521
CSO: 1829

MOTOR VEHICLE

COMPLAINTS OF SPARE PARTS SHORTAGES

Moscow TRUD in Russian 21 Jan 81 p 2

[Article by N. Akritov: Automobile Parts--Why Cannot Zaporozhets Owners Acquire Many Spare Parts"]

[Text] "Can one exchange the rim and muffler in the Zaporozhets here?"

"We do not have those parts and we do not know when we will have them."

Zaporozhets owners hear such answers at service stations in Moscow, Moskovskaya and Kaluzhskaya Oblasts and in other oblasts of the country. They also do not suspect that the reference of the vehicle service workers usually to the plants who interrupt spare parts delivery does not correspond to reality. The STOA [Automobile servicing station] simply take on mainly advantageous, expensive jobs to complete and do not want to be bothered with "trivia." Therefore, the stations order only large parts and assembled units, creating a shortage of small parts.

That is why the automobile owner buys a part where he must upon the slightest breakdown and most frequently from speculators and replaces it independently or bribes foremen to do it. We note that 50 percent of the Zaporozhets vehicles have manual controls and invalid owners are unable to repair the vehicles themselves. And most frequently, despairing of getting minor breakdowns corrected at stations, they are forced to make an agreement to replace the entire unit. A lot of money has to be spent but for the time being there is no other way out. It seems strange. When our shoelaces break, we buy a pair and we do not go to the store for new shoes.

This was discussed in the material "One Has to Deal With Profiteers to Acquire Spare Parts," published in TRUD (8 April 1980), and the comments to the article have been coming in since then.

For example, this is what fitter A. Zakharov from Zagorsk, Moskovskaya Oblast, writes. "The rubber bumper of the rear suspension broke in my ZAZ-968 automobile. I looked for the part for several months in automotive stores and I appealed to the service station. I left work more than 10 times on trips through the oblast and Moscow and spent so much money that I could have bought 10 of these parts and I finally had to get it from a profiteer."

N. Prokop'yev from Kuybyshev, A. Kuralenok from Tomsk, N. Antonenko from Leningrad, Yu. Kalyuzhnyy from Ashkhabad and many other readers write in their letters about the inconveniences which they encounter at the service stations and about the large losses of time and money for this reason. The authors of the letters suggest how to improve the operating procedure of service stations, support systems and distribution of spare parts and to make them more accessible for all vehicles.

We feel, write I. Marchenko, Yu. Tertychnyyand V. Klimchuk from Krasnodar, that the manufacturing plants should not be oriented toward the orders of STOA and stores. It has been established by technical norms how many of such and such parts are required for normal operation of a single automobile. These spare parts should be produced as a function of the automobiles sold.

Many authors of letters feel that deficiencies in maintenance are caused by the fact that there is no single manager at the STOA. They are subordinate to the Ministry of Motor Transport in one republic and they are related to municipal service enterprises in another. They are the stepchild of the territorial transport administration in yet another republic.

Moscow resident A. Vorob'yev and Kiev resident I. Kogut share their thoughts that all service stations should be subordinate to the producer of automobiles--the Ministry of the Automotive Industry. This will make it possible to count on and provide spare parts for all automobiles on a scientific basis.

"I appealed to STOA No 36 in Kiev," writes A. D'yakonov, "with a request to change the levers and bushings of the front suspension and they answered: 'We can install an entire suspension. The price will be 260 rubles.' I was outraged but they answered that there are no special accessories at the station to change bushings. A young man approached me through the doors of the station and offered to do this repair for 25 rubles. We went out into the parking lot and he had done everything that was necessary within two hours."

"In Alma-Ata," reports V. Davydov, "we can find any part at the STOA, only not in the warehouse and not in the shop, but behind the doors from the hands of station workers for 5 or 10 times the price. Why are service stations, created to help people, frequently transformed into nests of extortionists and bribe-takers. I see the only way out of the existing situation that if the STOA do not order the spare parts and do not have them, then more parts must be directed into the commercial system. If a part is needed, I pay for it, they bring it and that is all: I don't have to replace it and nothing more is required. And second, the vehicle should be repaired only in the presence of the customer. Then there will not be cases of replacing new parts with old ones, quality will improve and there will be no complaints."

"I feel," writes electrician A. Sakhranov of Mine imeni Komsomol'skaya Pravda, Rostovskaya Oblast, "small article markets should be created at the manufacturing plants. The expenses for maintenance of them should be included in the cost of the parts. This will be advantageous both to the state and to automobile owners. If I can be sure that I will receive the necessary part after placing an order, then I will not go to a profiteer to purchase the part at three times the price."

The readers' mail essentially supplemented the newspaper article. But after the question of why are there no spare parts should be another question--whether there will be spare parts? Because, A. Sipko from Novosibirsk feels, the managers of the appropriate ministries and agencies should complete the conversation on this topic and they should relate what measures have been adopted for positive solution of this problem.

This is what the chief of the Rosavtotekhobsluzhivaniye Association S. Vinokurov reported to the editors. A compulsory inventory of spare parts which should be permanently available at the enterprises of Avtotekhobsluzhivaniye is being prepared to provide owners of Zaporozhets automobiles with spare parts. Construction of a central republic supply base, which will be equipped with ASU [Automated control system], is being completed at Bronnitsy, Moskovskaya Oblast. This will permit more efficient handling and delivery of parts to the STOA. The automatic system will also help to improve study of the real demand for spare parts.

As is obvious from the answer of the director of the Mosoblavtotekhobsluzhivaniye Association V. Kaplin, measures have been adopted at the oblast STOA to improve automobile servicing, especially of Zaporozhets automobiles. Thus, specifically, accounting logs of demand have been established at all stations. The Orekhovo-Zuyeva-Noginsk, Serpukhov and Balashikhikha stations specialize in maintenance of Zaporozhets vehicles.

The general director of the Mosavtotekhobsluzhivaniye Association S. Petrochenkov, recognizing the serious deficiencies in delivery of available parts from the central warehouse to the STOA, complains against AvtoZAZ [Zaporozh'ye Automobile Plant], which "does not provide complex supply of automobile servicing enterprises with all spare parts."

Thus, the organizations mentioned in the newspaper article manifest concern over the existing situation with orders and provision with spare parts and are adopting measures to correct the deficiencies. However, there is reason to doubt this. And this is why. For normal maintenance of all Zaporozhets vehicles, the service stations and the Rosavtotekhobsluzhivaniye Association must order 17.5 million rubles' worth of spare parts, but only 4.9 million rubles' worth were ordered for 1981. And this is typical: not one part had been ordered which was checked by the editors during preparation of the material. Mufflers, windshields, headlight moldings, parking lights and fenders are not available at the service stations and 700 other types of spare parts will not be available. That is, automobile owners will not receive half the parts from the established nomenclature this year. But official responses are silent about this.

Here is yet another reason--agency dispersion of spare parts suppliers and dispersion of the organizations utilizing them. All automobiles and spare parts for them are produced by Minavtoprom [Ministry of the Automotive Industry]. That is why the ministry should be involved in maintenance of them. But the difficulty is that the ministry of motor transport of the RSFSR at one time took on itself automobile servicing in the republic and has very substantial profits in doing this. But Minavtotrans is unable to coordinate the work of spare parts suppliers. The result is such quite artificially created agency dispersion and in no way justified dispersion of spare parts suppliers and repair organizations and lack of coordination and confusion in planning occur. Therefore, so many unmarketable parts, so-called "nonliquidating parts" sufficient for many years even if the manufacturing plants stop deliveries, have been accumulated at warehouses of Rosavtotekhobsluzhivaniye. But they do not stop delivery and continue to produce them in the same large volumes. They are fulfilling their own plan. But for the plants to reorient themselves to production of other, now scarce parts is the same as a camel passing through the eye of a needle.

It is difficult to explain the position of Minavtoprom: it would be considerably more advantageous to turn out a metal-consuming product than to restructure 3-4 enterprises and to help them to cope with output, for example, the Melitopol' Engine Plant, of the pistons, rings for them and small parts for the engine and to reduce the shortage. But this is not even planned in the near future.

It is very unfortunate that not only the workers of the STOA have an irresponsible attitude to the needs of automobile owners, but superior organizations also tend to avoid solution of the problems touched on by the newspaper. The time has obviously come to seriously question the Rosavtotekhobsluzhivaniye Association and Minavtoprom about the fact that automobile owners have until now been forced to turn to profiteers for spare parts.

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MOTOR VEHICLE

BRIEFS

HIGHWAY CONSTRUCTION--The Megri-Kadzharan high-altitude major highway has become operational. Its length is approximately 50 kilometers. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 47, Nov 80 p 3] 6521

KAMAZ TRUCK CONSTRUCTION--The Kama complex of plants for heavy truck production (KamAZ) is a child of the 10th Five-Year Plan. The first trucks were assembled on the main conveyor on the eve of the opening of the 25th CPSU Congress and the 200,000th KamAZ truck came off the conveyor at the end of December 1980. Their role in national economic transport is increasing continuously. KamAZ vehicles are not inferior in technical level and economy to the best domestic and foreign achievements. On 23 December 1980 the State Certification Committee decided to relate two baseline models--the KamAZ-5320 stake-bed truck and the KamAZ-5410 truck tractor--to a higher category of quality. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 4, Jan 81 p 17] 6521

VOLGA GAZ-3102 CONSTRUCTION--The automobile builders of the Gorkiy Association AvtoGAZ have begun to manufacture the first industrial lot of a new compact vehicle, the Volga GAZ-3102. The pledge adopted by the workers of the enterprise was fulfilled by the 26th CPSU Congress. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 4, Jan 81 p 3] 6521

BUS CONSTRUCTION--New models have been developed at the All-Union Experimental Design Institute of Bus Construction. "Model 4202 has already been turned over to the L'vov Bus Plant for serial production," says the director of the institute I. Smirnov. "A diesel instead of a gasoline engine has been installed and a hydromechanical gearbox and power steering are used. The usual handbrake lever has given way to a system with spring-loaded energy storage devices on the rear wheels. Until the doors are closed, the accelerator pedal does not operate and the machine will not move further." "The doors of the new bus are wider than those of previous vehicles," the chief designer of the plant V. Moskalev adds to the conversation. "Wide platforms have been built in front of the doors in the body. The floor of the vehicle is lower than usual and this made it possible to lower the steps of the bus to the street. Hot water heating is switched on in winter and the ventilation system is well thought out." Bus 4202 is already being assembled in the new plant building. At the same time yet another model--the 5252--is being prepared at the institute. An elongated body with three wide doors permits 100 passengers to be taken on board at the same time. [Text] [Moscow NEDELYA in Russian No 6, 1981 p 5] 6521

ELECTRIC DUMP TRUCKS--Scientists of the Institute of Mining of the Kazakhstan Academy of Sciences have designed a large-capacity electric dump truck. An experimental prototype of it can carry 20 tons of freight per trip. A DC motor, alkali storage batteries and automated control system have been installed instead of a diesel engine. The need to activate work to develop electric vehicles was reflected in the draft of the CPSU Central Committee to the 26th Party Congress. [Text] [Moscoe NEDELYA in Russian No 8, 16-22 Feb 81 p 5] 6521

YEREVAN-ARTASHAT HIGHWAY--Traffic has opened on the new Yerevan-Artashat expressway in Armenia--the first truck trains have travelled along it. The new highway cuts in half the time of shipping agricultural goods from remote villages to the republic capital. The Armenian road builders fulfilled the pledges adopted in honor of the 26th CPSU Congress with introduction of the highway into operation. [Text] NEDELYA in Russian No 8, 16-22 Feb 81 p 5] 6521

URAL TRUCKS--The powerful Ural trucks produced at the Production Association Uralskiy Vehicle Plant at Miassa are laboring successfully in many corners of the country. Work is being carried out at the enterprise to develop new models. These are modifications of vehicles for working under arctic conditions. Among the other addresses of use of this vehicle are enterprises of the petroleum industry of Western Siberia and the agricultural regions of the country with severe weather conditions. [Text] [Moscow PRAVDA in Russian 12 Jan 81 p 2]

KAMAZ-55102 PRODUCTION--Naberezhnyye Chelny, Tatarskaya ASSR, 19 Jan 81--The Kama Association for Heavy Truck Production has begun to produce rural version of the truck. A lot of KamAZ-55102 trucks has come off the second branch of the main conveyor. The new dump truck with capacity of seven tons is the sixth modification in the family of heavy-duty KamAZ trucks. It is designed for use in agriculture. Its body tips in three directions and the truck can operate as a truck train with self-dumping trailer. The first vehicles of the new modification have been sent to the Neftekamsk Dump Truck Plant, where they will be equipped with bodies. And the KamAZ collective is already working on development of the KamAZ-4310 all-terrain truck. It is planned to produce the first lot of these trucks by the opening of the 26th CPSU Congress. [Text] [Moscow PRAVDA in Russian 20 Jan 81 p 1] 6521

KAZ-4540 PRODUCTION--The Kutaisi Automotive Plant specializes in production of heavy duty truck trains. The automotive plant workers are now preparing for serial production of a new model of the KAZ-4540. More than half the products of the enterprise carry the honored pentagon mark of quality. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 22 Jan 81 p 2] 6521

HIGHWAY RECONSTRUCTION--The Zarafshan Highway links the densely populated regions of Samarkandskaya and Bukharskaya Oblasts. The freight turnover on this highway increases from year to year and traffic intensity is increasing sharply. It increased 2.5-fold during the past few years alone. This required that the road be reconstructed and widened and that the paving be improved. Instead of a median strip, it was decided to install a precast concrete dividing barrier 87 cm high on the road. This made it possible not only to separate oncoming traffic flows and to ensure safety, but also to preserve valuable irrigated lands by elimination of the dividing median. Specialists of Uzgiproavtodor and Uzremdorproyekt Institutes planned the reconstruction of the Zarafshan highway. [Text] [Moscow AVTOMOBIL'NYYE DOROGI in Russian No 11, 80 pp 6-7] 6521

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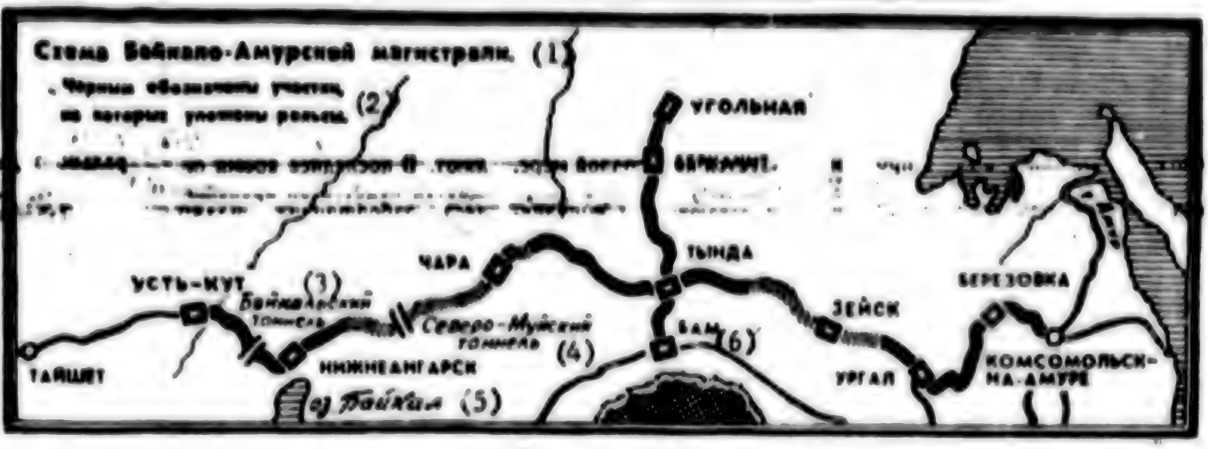
RAILROAD

BAYKAL-AMUR MAIN LINE PROGRESS REPORT

Moscow PRAVDA in Russian 3 Jan 81 p 2

[Article by PRAVDA special correspondents V. Yermolayev, Yu. Zhigaylov, V. Orlov and G. Yastrebtsev, Baykal-Amur Main Line [BAM]: "From Baykal to the Amur"]

[Excerpt] The construction of the BAM is at its peak and the road is already beginning to repay to the state the capital expended for laying it. In Tynda the Main Administration for BAM construction (GlavBAMstroy) has hanging on the wall a diagram in which the BAM is designated by three conventional symbols: a dotted line for the segments slated for construction and red and black lines respectively for the segments turned over for temporary and permanent operation. In the diagram which Pravda is publishing today the symbols are different but it is quite evident in it that there are less and less of the "white patches" left on the main line.



Key:

1. Diagram of Baykal-Amur Main Line
2. Black designates sectors in which tracks have been laid
3. Baykal tunnel
4. North Muya tunnel
5. Lake Baykal
6. BAM

To the recently established administration of the Baykal-Amur Railroad with its three departments--the Tynda, the Urgal and the Severo-Baykal--there were turned over for operation 1,600 kilometers of steel tracks. All the new sectors are going into operation, particularly Komsomol'sk-on-Amur--Berezovka and Berkakit--Ugol'naya. When we left for southern Yakutiya we more than once encountered trains loaded with Neryungri coal. The first train traveled on the Little BAM (the name given to the line going north from the Trans-Siberian Railway) in October 1978 and today Yakut coal is the principal type of freight of the Tynda section. The collectives of railroad workers and of the Yakutugol' [Yakut Coal] production association have concluded a contract for prescheduled extraction, loading and delivery of fuel to the consumers of the Far East. The related industry workers have pledged themselves to send out 100,000 tons of above-plan coal by the time of the opening of the 26th CPSU Congress.

Only recently they talked about the BAM as something in the future: a steel line will be opened, trains will be sent out, cities and settlements will grow. Now along with the word "builder" they more and more frequently add the word "railroad worker." A whole year has gone by since the arrival at the main line of the All-Union key detachment of transport workers which was the primary source of the formation of the Tynda section collective. At first by no means all the youngsters had the necessary occupational skills and now hundreds of young BAM workers operate passenger and freight trains and work as track specialists, traffic controllers, signallers, and freight and ticket clerks.

The BAM is being built. The BAM is in operation. These figures give evidence of the intensiveness of the movement of the trains: since the beginning of operation 10 million tons of freight have been transported along the sectors of the main line. During the year the Tynda division delivered more than half a million passengers. From the BAM "capital" one can go by train to Yakutiya, Khabarovsk and even Moscow. Recently organized also was passenger traffic on the Large BAM: from Tynda west to station Larba and east to station Bestuzheva. On the eve of the 26th CPSU Congress trains begun running to station Chil'chi, which is 230 kilometers west of Tynda. Things are also lively in the eastern sector of BAM. Traffic was just opened to Alonka, shortening by nearly half the trip from the mining settlement of Chegdomyn to Komsomol'sk-on-Amur.

In the summer of 1971 one of us had occasion to be in the city of Ust-Kut in Irkutskaya Oblast. At that time the tracks of the Lena railroad station here broke off abruptly on the left bank of the great Siberian river. There was no steel track further east. They began laying it in 1974 and now the rails go past the rough Davanskiy mountain pass through the city of Severobaykal'sk to Buryatiya. And now the track layer has left stations Nizhneangarsk and Kichera behind and is advancing further east to Uoyan. Working movement of trains to Severobaykal'sk and Nizhneangarsk from the west has been begun. Freight is going to Buryatia without any intermediate transshipments.

But the BAM is not just tracks in the taiga. The "main line of the century" comprises new cities and settlements, electric power lines, sovkhozes and timber tracks; it comprises the renewed Siberian and Far Eastern land with its incalculable riches, which have waited patiently for their hour under the seven seals of the harsh taiga, the mountain passes, the impassable roads, the swift rivers, the permafrost, the layers of ice, and the high seismicity. The Northern

Transsib has breathed new life into the formerly remote places. Take this same Ust'-Kut. Since the beginning of the construction of the BAM the population of the city and its region has increased by 20,000 persons. In the taiga along the Lena there have sprung up the settlements of Zvezdnyy, Niya, Nebel' and Ul'kan. In the suburbs Biryusinka and Yakurim have been expanded and beautified. N. Markova, a native northerner and chairperson of the Yakurim settlement soviet said:

"Previously less than 200 persons lived in the settlement and now there are 3,000. Seventy young families registered during the year!"

Nearing completion is the local 150-kilometer highway macadam road. Along this road they are already delivering everything necessary from Ust'-Kut, which is located nearby, to the sovkhozes Podymakhinskiy and Markovskiy, which are building livestock breeding complexes. On the westernmost flank of the BAM and in Tayshet among the marshy wastelands there have arisen the buildings of the production base of the northern Transsib. Recently turned over for operation was the second section of a plant for the repair of large trucks. In the neighboring enterprise they will "treat" the road construction equipment. A reinforced concrete structures plant will begin to produce about 150,000 cubic meters of various products for the BAM.

And thus it is everywhere along the route of the main line. Electric power has come to Severobaykal'sk, Nizhneangarsk and Severomuysk from the Ust'-Ilimsk GES. The event is an important one. The turbines of the hydroelectric power stations are being turned by Angara, which has opened a path from the Baykal through the cliffs of the southwestern shore of the lake. And the powerful flow of electricity generated by it has reached the opposite shore of the "glorious sea." It is as if the willful daughter of the gray-haired Baykal has returned to it bearing as a gift the shining man-made sun.

A new life has come also to the almost wholly neglected Siberian hamlets. In one of them, Verkhnaya Zaimka, which is located near the snow-covered branches of the Bagruzinskiy range, we conversed with both the native inhabitants and the workers of a mechanized column quartered there. All agreed on one thing: the railroad has given the village a new birth. Verkhnaya Zaimka now has a central farmstead belonging to the sovkhoz Angarskiy, which was established less than a year ago. At first the sovkhoz comprised three persons; now it numbers about 200.

The BAM is returning a hundredfold the capital expended for laying it: by the awakened taiga, by the new life of the people, by the broad promise of tomorrow. But we would be straying from the truth if we said that the work here is going smoothly and all the problems have already been solved. No, they are a long way from this. A construction project on the scale of these, one which extended for more than 3,000 kilometers through undeveloped regions, inevitably had to contend with great difficulties. It is no simple matter to lay tracks in the taiga and it is even harder to build sidings and stations and to erect modern settlements and cities. The production base is still lagging and at times the blocks and panels for the homes have to be transported from a distant point. The new complex of BAM construction industry enterprises in Shimanovska in Amurskaya Oblast is not entirely equal to the tasks assigned to it, although in five years the production of prefabricated reinforced cement here has increased from 65,000 cubic meters to 140,000.

And take the "capital" of the BAM--the city of Tynda. Whereas on the eve of the 25th CPSU Congress A. D. Gusev's brigade from the Glavmosstroy [Main Administration for Moscow Housing and Civil Engineering Construction] had completed the erection of the two first nine-story large-panel houses here, now there are already several dozen of them. And yet the problem of housing, schools, and cultural and children's institutions is still a very acute one. The many organizations located in Tynda are building everything for themselves, are concentrating their attention chiefly on production installations, and are postponing "till later" social and cultural service institutions. The party gorkom repeatedly brought up the matter of these disproportions in its resolutions but the situation remains unchanged.

We rode in a diesel locomotive along the Dananskiy mountain pass into the Baykal tunnel passage. Here the construction and railroad workers are working with particular intensity. From the time of the opening of operational train traffic through the Baykal range millions of tons of freight have been shipped from Irkutskaya Oblast to Buryatia. But the work could have been better if the status of the existing sector of the road, and particularly of the locomotive setup and the repair base, conformed to the necessary requirements. The depot of the Lena-Vostochnaya station is still a small operation and only minor repair jobs are done in it. And to get a wheel pair machined, for example, the locomotives travel 15 kilometers to the Lena depot, getting to which is largely a double-track proposition. In the Kunerma-Severobaykal'sk sector they have been dragging their feet in the installation of signalling and communication facilities and in heavy snowstorms the snow-removal machines are not able to restore the tracks to operational condition. There have been days when Glav BAMstroy arranged for railroad cars to be made available at Ul'kana and Kunerma but had to get the freight shipped from there by trucks. This despite the existing railroad, which they were in such a hurry to build!

"The locomotives operating on our line are not suitable," say the engineers. "They are not powerful and dependable enough for the complex character of the route in the mountainous taiga. We read in the newspaper that the Czech enterprise Shkoda is developing especially for the BAM the ChS-8 electric locomotive with a new powerful engine designed for the prolonged up and down grades which characterize the Siberian line. We are waiting very expectantly for just such a locomotive.

In the winter the train proceeds slowly and cautiously through the Davanskiy mountain pass. The white caps of the peaks tower above and the swift mountain rivers have frozen in the deep precipices. After the abundant Siberian snowfalls the locomotives move among the three-meter snowbanks as if in a corridor. And there under us in the bowels of the Baykal range the hard work does not wane day or night--the builders are rushing to finish the railroad tunnel passage which will facilitate and shorten the travel of the trains on the BAM line.

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RAILROAD

RECENT IMPROVEMENTS IN KAZAKHSTAN'S RAILROADS

Alma-Ata NARODNOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 8, 1980 pp 52-54

[Article by A. Orazbekov, chief of a subdivision of main line and industrial transport, Gosplan of Kazakh SSR: "Stages of Growth"]

[Excerpts] The entire development of the economics of Kazakhstan is indissolubly linked with the railroads. Before the Great October Socialist Revolution our region was among those in last place in Russia as far as density of railroads was concerned. In addition, the existing railroads were for the most part sidings and single-track; they consisted of small sections traversing a vast territory. All of Semirech'ye and Central Kazakhstan had no railroads at all, were hundreds of kilometers distant from them, and were remote "depths."

The growing volume of shipments in the republic is being taken care of not only by the introduction of new railroad lines but also by the implementation of a whole complex of other measures, chief among which is the conversion of the railroads to new types of traction. The receiving and dispatching tracks at the stations have been extended and the lines have been equipped with automatic blocking and control centralization. At a number of sectors the secondary tracks were lengthened and double-track additions installed.

In the 10th Five-Year Plan work was largely completed on conversion of the railroad lines to electric and diesel locomotive traction. The locomotive fleet was fully replenished. In the principal directions the trains are operated through use of high-powered, main line diesel locomotives and in the busiest freight shipment sectors of Karaganda-Tselinograd-Tobol-Zheleznorudnaya (984 km) the trains are operated by electric locomotives.

Technical remodeling has made fundamental changes in the transportation of passengers and has transformed the stations and the intermediate separate points. New stations have been built in the oblast centers. The speed of the long-distance and local passenger trains has been increased.

Major changes have been made in the track setup. More and more of the heavy type of rails have been laid on reinforced concrete crossties and rubble foundation. On hundreds of kilometers jointless track has been laid with rail lengths up to 800 meters. The track work has been mechanized to a significant degree, especially the work for reconstruction and capital repair.

For the shipment and full safeguarding of freight great importance is attached to the strengthening of the freight-handling setup. On the railroads of the republic a great deal of work has been done for the development of the freight stations and the construction of new warehouses, platforms, and mechanized freight yards and container platforms. More than 92 percent of the loading and unloading operations are being carried out by various hoisting machines and mechanisms.

The roads have been extensively equipped with the newest facilities of automatics, telemechanics and communications. The requisite work has been done for the mechanization and automation of the production processes involved in the repair of locomotives and cars and information and computer centers have been made available for this work.

The 1977 split of the Kazakh Railroad into three parts--the Alma-Ata, the West Kazakhstan and the Tselinna--made it possible to monitor and improve the management of the line enterprises and to arrive at more concrete solutions with respect to stepping up the level of the operational activity, the technical development of the organizations, and the recruitment and assignment of personnel in production.

In the four years of the 10th Five-Year Plan 555 km of second tracks and two-track additions were built in the busy traffic sectors of Mointy-Chu and Kandagach-Arys', the new Kustannay-Novo Uritskoye railroad line was put into operation, and the Tselinograd-Ekibastuz sector was converted to electric traction.

The extent of the lines equipped with automatic blocking and dispatcher control gained a 1563 km increase. During this period the total amount of the capital investments applied to the development of the technical base of the railroads was 594.6 million rubles, which was 7 percent more than the comparable period of the Ninth Five-Year Plan.

The organizational measures implemented and the work accomplished for the technical equipment of the industry organizations and the introduction of progressive technology and advanced experience brought about a considerable rise in the volume of shipments, an increase in the intensiveness of the utilization of fixed production capital, and an improvement of the technical and economic indicators for the operation of the railroads. In 1979 the freight loading volume was 19 times that of 1960 and the freight turnover was 22 times as great.

On the basis of the results of the All-Union competition in 1979 the collectives of the Alma-Ata Railroad and the Kustanay section were awarded the challenge Red Banners of the CPSU Central Committee, the Council of Ministers USSR, the AUCCTU, and the Komsomol Central Committee. The collectives of the Petropavlovsk and Kokchetav section obtained the country's best results in track maintenance; they furnished uninterrupted and safe movement of trains.

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OCEAN AND RIVER

LENINGRAD MODEL ADOPTED AT MAGADAN PORT

Details of Implementation

Moscow EKONOMICHESKAYA GAZETA in Russian No 38, Sep 80 p 5

[Article by A. Korolev, secretary of the Magadan CPSU City Committee: "The Transportation Conveyor in the North"]

[Text] It [the transportation conveyor] was created in July 1978 after issuance of the well-known decree of the CPSU Central Committee entitled "On the Concerted Effort of Collectives of Seamen, Railwaymen, Truckers and Watermen in the Leningrad Transport Junction." The purpose of setting up the conveyor was to utilize more fully the potential for increasing the traffic capacity of the Magadan Maritime Commercial Port on the basis of the progressive know-how of the people in Leningrad. This is an extremely important question for us: after all if we leave aside aviation, year-round operation of the maritime commercial port is a reliable basis for regular supply of the settlements, enterprises and organizations located over an enormous area.

In view of the position the port occupies in meeting the urgent needs of the oblast, it is now undergoing radical reconstruction. This project is still not completed, and to a considerable extent it is this circumstance that has given the party organization the task of speediest adoption of the know-how of the people in Leningrad.

What the Experiment Has Demonstrated

If we are to speak about the results of operation under the new system over the 2 years which have passed, we should note first of all the large potential capability of interlinked continuous planning of the operation of all the interested organizations. The point is that the components of the Magadan transportation conveyor had to include not only the organizations of maritime and motor transport, but also the principal enterprises receiving cargo. This was because the port does not have the necessary storage capacity and is essentially a transit port. In the initial period this makeup of the conveyor aroused certain fears, especially since those following the initiative in Odessa, Vladivostok, Khabarovsk and other cities confined themselves to coordinating the activity of transport organizations. But reality confirmed the correctness of this decision.

Whereas in 1976 and 1977 the handling of cargo in the maritime commercial port remained at the same level, and seemed to have reached its ceiling, after a year of operation under the new system this figure had increased 5.5 percent. This rate of growth is being maintained even at the present time. In the past year 66 percent of the vessels were processed ahead of schedule, and there was a substantial saving on laydays.

This year the freight traffic of the principal transportation organizations increased 9 percent. The handling of cargo on the basis of "directly to the customer at dockside" increased nearly 30 percent. The port's work force was awarded the challenge Red Banner of the USSR Ministry of Maritime Fleet on the basis of the results for the first quarter. The assignment of the first half of the year was fulfilled 5 days ahead of schedule. Good results in performance were achieved in July and August. Among the production front-rankers we should mention the mixed teams of longshoremen and machine operators of A. Ambrosov, V. Gusarov and N. Gramatenko, whose teams completed fulfillment of the 5-year plan last year, and the teams of V. Fedorov and Yu. Chernoivanenko did the same in honor of the 110th anniversary of the birth of Vladimir Il'ich Lenin.

The effectiveness of the concerted effort has been promoted to no small degree by the system for monitoring observance of plan discipline. The performance of each section of the transportation conveyor is analyzed in daily work scheduling conferences. Conferences of the heads of all the organizations participating are held concerning the results for the week. The results of performance for the month are taken up in a meeting of the coordinating council. The need for constant followup and for adoption of decisions that are binding both on transportation organizations and also supply-and-sales organizations, is also dictated under our conditions by the fact that when general cargo is arriving on a large scale it is sometimes indispensable to increase substantially the amount carried out of the port in each shift and consequently to revise the work schedule of depots where this cargo will be taken.

In speaking about experience in using the method of the people in Leningrad, we should note that the principal difficulty consists not of carrying out any particular technical measures, but in removing departmental barriers which have been set up and which in fact get set up sometimes even now in the way of the transportation conveyor. Party members had to do quite a bit before mutual recriminations were replaced by businesslike cooperation and initiative in overcoming difficulties. Changes of this kind were promoted to a decisive degree by implementation of a set of measures of a party and political nature. The city party committee analyzed shortcomings in the operation of transport and supply organizations and outlined specific ways of correcting them, and it issued the relevant party assessment of the activity of those supervisors who had displayed an irresponsible attitude toward the effort.

The problems of increasing the efficiency of operation of the entire transportation conveyor, the development of socialist competition, and the strengthening of party influence in lower-level work collectives have become the topic of detailed discussion in quarterly city conferences of longshoremen crew leaders, transport workers and representatives of other participants. Suggestions on improvement of operation are drawn up in the form of recommendations which the city CPSU committee sends to primary party organizations.

The role of the council of secretaries of party organizations of the enterprises in the transportation conveyor has been considerably invigorated in solving all problems. The council of secretaries has become the center for coordinating efforts to see that it operates without interruption. In meetings of the council, which consists of 17 party officials of the leading collectives involved, regularly hear reports on measures being taken by primary party organizations to strengthen technological and work discipline and to enhance people's responsibility for the jobs assigned them. In particularly problematical situations special posts are created to see that the necessary measures are carried out in good time.

There Is Still Unused Potential

The purposive activity of party organizations and the measures being carried out by enterprises and departments are yielding constructive results. But they are unable to fully eliminate the discrepancy between the increased needs of the oblast's economy for freight traffic and the extent to which they are being met. Undoubtedly the definitive solution of the problem is bound up with completion of the port's reconstruction.

But aside from that there is still sizable unused potential for improving the organization of the delivery and handling of cargo. The most important of them is ensuring conditions for smooth operation and containerization. To speak in concrete terms, we should note first of all that the Far East and Sakhalin maritime shipping companies, the railroad and our suppliers have not registered sufficiently in their plans the capabilities of the Magadan maritime port in the good summer months, when it is able to receive and process far more cargo. As for the question of containerization of cargo shipments, the measures being taken have already brought appreciable results. Since the first of this year the volume of container shipments has increased 16 percent. Now about 50 percent of loose cargo is delivered to the oblast in containers. But the possibilities in this regard have by no means been exhausted.

Further introduction of progressive technology is being held back by unsatisfactory preparation of local organizations for this effort by the RSFSR Ministry of Motor Transport, which has not furnished them the specialized transportation equipment in sufficient amount. Matters in this respect are still more unsatisfactory at the Magadan depots of the USSR Ministry of Trade and the USSR Ministry of Nonferrous Metallurgy. Their share in the total volume of industrial goods reaching the oblast is nearly 90 percent. Yet at these depots they do not even have the appropriate equipment for removing 20-ton containers from trailers, and therefore the loading of cargo is done by hand, which results in high idle time for transportation equipment. We have serious complaints to address to the Northeast Main Administration for Material and Technical Supply of USSR Gossnab concerning the organization of reception of containers.

An important potential for increasing the operating efficiency of the transportation conveyor is to make up bundles and bales of cargo in small containers. This mainly concerns grain forage, which is delivered to us in sacks. It would be good if the USSR Ministry of Procurements promoted their replacement by another container, which would make it possible to substantially reduce the time of handling the cargo and would thereby eliminate above-allowance idle time of trucks during loading and unloading operations.

Activating the potential still not utilized and creating the necessary conditions for application of the achievements of contemporary technology for the delivery and processing of cargo will promote development of the productive forces of the country's northeast, and in this matter we expect more effective aid from the relevant organizations. Socialist competition is expected to play a large role in this effort. The party organization of the oblast is directing its political, organizational and educative effort, as indicated in the decree of the party Central Committee entitled "On Socialist Competition for a Worthy Celebration of the 26th CPSU Congress," toward broader involvement of the workers in precongress competition, toward the persistent fight to achieve higher production efficiency and quality of performance, to speed up the growth of labor productivity, to strictly observe an economy regime, and to strengthen work and state discipline.

Officials Respond

Moscow EKONOMICHESKAYA GAZETA in Russian No 5, Jan 81 p 16

[Responses to the article of A. Korolev by officials whose organizations were criticized in his article]

[Text] Response of A. Lebed', Deputy Chairman of USSR Gossnab

The article correctly notes that the favorable summer months are not sufficiently utilized for delivery of cargo to the port of Magadan. At the present time additional measures have been taken jointly with the Ministry of Maritime Fleet to increase the hauling of cargo to that port in the second and third quarters of 1981.

USSR Gossnab has drafted and approved additional specific measures to strengthen the traffic of cargo in bundles and bales, on pallets, in special and general-purpose containers to the regions of the Far North. Consumers have been made more accountable for nonreturn of containers and materials used for making up bundles.

Response of Yu. Kovalev, USSR Deputy Minister of Procurements

The technical question of making up 1-ton bundles of products and of loading the bundles into trucks or railroad cars has by and large been solved by the USSR Ministry of Procurements. Steps are being taken to further increase the volume of bundled cargo of mixed feeds and flour and meal to the regions of the Far North.

A project concerning improvement of the means and methods of cargo-handling operations in transshipment of grain cargo and mixed feed for regions of the Far North has been included in the topic plan for scientific research institutes of the sector.

Response of N. Komissarov, RSFSR Deputy Minister of Trade

Mechanization of operations with 20-ton containers has been held back by the Ministry of Trade's limited funds for 20-30-ton cranes. RSFSR Gosplan has allocated to the ministry for 1981 additional funds which have been turned over to the trade administration of the Magadanskaya Oblast Executive Committee.

Response of Yu. Vol'mer, Chief of the Association Dal'flot of the USSR Ministry of Maritime Fleet

In the Far East basin a set of organizational measures has been carried out, and this has made it possible to considerably increase the volume of cargo carried in heavy-load containers. In 1981 new container carriers will be operating on the Magadan line, and the stock of 20-ton containers will be increased considerably. Moreover, the daily incoming and outgoing traffic of containers will be 100-110 units.

Jointly with the republic association Vostokavtotrans a plan of measures has been drafted to increase the volume of freight carried. Hovercraft devices have been developed jointly with the Kharkov Aviation Institute. In order to entirely eliminate manual labor in the unloading of cement and in order to reduce unloading time a program has been drafted for shipping cement in containers.

Response of Ye. Sarbayev, Deputy Chief of the Association Vostokavtotrans of the RSFSR Ministry of Motor Transport

In order to coordinate the operation of maritime and motor transport on the basis of a continuous schedule-plan (using the method of transportation workers in Leningrad), a transport junction has been set up in the Magadan maritime port.

In order to organize straightforward and uninterrupted operation in the port the RSFSR Ministry of Motor Transport, jointly with the Ministry of Maritime Fleet, drafted and approved measures for further development of centralized servicing of the Magadan maritime port in which provision was made for solving the problems of consolidating small cargo consignees, of ensuring that cargo and containers are prepared for shipment, and of compiling a straightforward schedule for the arrival of vessels.

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TRANSPORTING RESERVES FROM PORT TO PORT

Moscow VODNYY TRANSPORT in Russian 10 Mar 81 p 2

[Article: "Put All Reserves Into Action"]

[Excerpts] Despite the sufficient quantity of bulk cargo, dispatch of it was not provided in the planned volume by the collectives of the Kaliningrad, Leningrad, Klaypeda, Il'ichevsk, Odessa, Tuapse, Poti and some other transport terminals. The workers of Il'ichevsk Port and Il'ichevsk Station have not yet organized dispatch of vegetable oil in the given volumes, while the managers of the Odessa Division of the Odessa Railroad, the Black Sea Shipping Company and the Odessa Railroad are not implementing adequate measures to correct the developed situation. Delivery and handling of refrigerated cars at Riga, Klaypeda, Reni and Odessa ports and at the corresponding stations of the Pribaltic, Moldavian and Odessa Railroads were organized unsatisfactorily.

Beginning in the second half of February, dispatch of freight in open rolling stock, equipment, pipes and metal products deteriorated due to nondelivery of cars. This work was organized most unsatisfactorily at Leningrad, Kaliningrad, Riga, Il'ichevsk, Kerch' and especially at Vladivostok, Nakhodka and Vanino transport terminals. This also occurs because in some cases the coordinating committees attached to the Councils of Working Peoples Deputies poorly monitor the work of the transport enterprises to ensure delivery and handling of rolling stock in the planned volumes.

Unloading of cars with export and transshipping goods was improved in February. The Murmansk, Leningrad, Klaypeda, Izmail', Reni, Berdyansk, Nikolayev, Kherson, Novorossiysk, Baku and some other transport terminals provided uninterrupted acceptance and unloading of delivered rail cars.

At the same time the Il'ichevsk, Zhdanov, Vladivostok, Nakhodka and Vanino transport terminals as before did not provide unloading of cars in the planned volumes. A number of shipping companies, including the Black Sea, Far Eastern and Sakhalin, permit violations of the ship delivery schedules for export of cargo without informing the appropriate GKhO [Expansion unknown].

Significant losses are inflicted on the use of the carrying capacity of ports due to irregular delivery of cars in some cases to the freight fronts over a period of days.

Timely delivery of cars for unloading is not monitored at some transport terminals. As a result, rail cars are delivered for later arrival, which leads in some cases to prolonged idle times of individual rail cars. This is typical for Odessa, Il'ichevsk, Vladivostok, Vanino and other transport terminals. The decision on increasing the switching facilities at Zhdanov, Il'ichevsk and Odessa transport terminals, adopted in February, should contribute to correcting the developed situation.

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OCEAN AND RIVER

STATUS OF RIVER TRANSPORTATION OUTLINED

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[Article by S. Arsen'yev, Department Head of IKTP [Institute of Complex Transportation Problems] attached to USSR Gosplan, Doctor of Technical Sciences, Professor and Ye. Makhlin, Section Head of IKTP, Candidate of Technical Sciences: "On the River Mainlines"]

[Excerpts] However, despite the adopted measures, there are significant deficiencies in river transport. Few specialized ships are being constructed, which reduces the attraction of new cargo traffic volumes to river transport. The developed nonoperational relationship between towing and non-self-propelled tonnage has a negative effect on introduction of more efficient methods of fleet operation and on the economic indicators of its operation. There are few ships in the fleet for small rivers.

The disproportion between the levels of development of the fleet and ports has not been corrected, as a result of which more than one-third of the operating period of ships is related to cargo operations or anticipation of them. The idle times of the fleet at the piers of different agencies are especially significant. In some ports there is a shortage of warehouse spaces, specifically for cargo requiring closed storage, and intraport and access tracks are poorly developed. The capacities for ship repair are inadequate, including those for mixed-navigation motor ships.

The task of increasing the contribution to meeting the needs of the national economy for shipments has been posed to river transport in the Main Trends. Shipments will increase at more rapid rates in the basins of Siberia, the Far East and the Arctic. It is planned to more widely utilize the capabilities of the river fleet to take the load off railroads on those lines where this will yield a saving. It is planned to extend the navigation season on the main river routes and as a result to deliver a significant quantity of cargo. The planned rates of growth of the cargo volume traffic of river transport for the 11th Five-Year Plan--19-20 percent --far exceed those for the railroad workers and seamen.

The material and technical base, and primarily that for guarantee of shipments in the northern and eastern regions of the country, is being strengthened significantly to fulfill the tasks faced by the river workers.

Work is continuing to improve the water ways. The reservoirs of the Cheboksarskaya and Nizhnekamskaya GES will be filled to the planned marks during the new five-year plan and the Konstantinov Hydraulic Engineering Facility on the Don River will be constructed, as a result of which the depths on the middle sections of the Volga, Kama and Lower Don Rivers (to Ust'-Donetsk Port) will increase to the values established at all other sections of the Unified Deep Water System of the European USSR. This provides for more efficient utilization of the large-capacity fleet here. Favorable prerequisites will be created from the beginning of the 1981 navigation system for a significant increase of shipments in inland and international traffic on the Lower Dnepr River and the efficiency will be increased. Construction of the second branch of the Sheksna Lock will be completed during the 11th Five-Year Plan. This will permit a sharp increase in the use of the Volga-Balta Canal, mainly for interrayon traffic. It is planned to improve the navigation conditions on the rivers of eastern ports, where new routes will be developed and primarily in the oil- and gas-producing regions of Western Siberia.

The fleet will be supplemented with new vessels. Special attention is being devoted to priority delivery of vessels to the shipping lines of Siberia and the Far East. The structure of the fleet will be improved due to vessels for large-capacity sectional and assembled towed barges. Dry cargo motor vessels with capacity of 5,000 tons, non-self-propelled barges, tankers of different capacity, tugboats and powerful icebreakers for extending the operating season on the rivers will be delivered to river transport.

The river fleet will receive many dry-cargo vessels and mixed-navigation tankers to provide foreign trade shipments and direct traffic between maritime and river terminals inside the country. This will make it possible to compensate to a significant degree with shortage of small-capacity maritime vessels.

Significant work is planned to develop port-pier facilities, primarily in regions of Siberia, the Far East and the Arctic. New port capacities will be put into operation here or existing ones will be reconstructed at Krasnoyarsk, Yakutsk, Komsomolsk, Nizhnevartovsk and Nadym and the second unit of the Tomsk Port and the fourth unit of the Osetrova Port will be constructed. Extensive work on construction and development of the piers at enterprises and supply bases of Mingazprom [Ministry of the Gas Industry], Minnefteprom [Ministry of the Petroleum Industry], Minneftegazstroy [Ministry of Construction of Petroleum and Gas Industry Enterprises], Mintsvetmet [Ministry of Nonferrous Metallurgy] and other ministries and agencies located here will be provided to ensure delivery of goods in the eastern and northern regions.

Large port capacities which provide transshipment to river routes and acceptance of significant flows of coal, timber, ore, petroleum products, grain, chemical and other cargo from ships, will be put into operation during the five-year plan to solve the posed task on more complete utilization of the river fleet to take the load off railroads. It is planned to construct large specialized transloading complexes at Kambarka to transfer from rail to river transport large volumes of coal and timber coming from the eastern regions to the European USSR. The capacities of the Yaroslavl' Port will be reconstructed from transloading northern timber from the railroads to river vessels. Large ports will be constructed at Podporozh'ye and Kalyazin to accept bulk cargo from vessels. Development of ports at Sarapul, Yeysk, Kherson, Pinsk and some other points is planned, which will ensure more complete utilization of the capacities of river transport for cargo shipment.

Construction and reconstruction of the ports and piers of enterprises of various ministries and agencies located near river routes, planned during the 11th Five-Year Plan and the subsequent period, will be of important significance for taking the load off railroads. The second unit of the port of the Cherepovets Metallurgical Plant for acceptance of iron-ore concentrate and limestone now delivered by rail will be constructed during the future period under consideration. The piers of the Uralkaliy Association will be reconstructed and expanded to increase water shipments of potassium salt to almost 1.5 million tons. Piers will be constructed for acceptance of several million tons of iron ore and shipment of the finished product to metallurgical plants near the Dnepr River and also piers will be constructed to ship and accept petroleum products at the petroleum refining plants and thermoelectric power plants attracted to the water routes of the central basins.

The ports and piers of the river fleet and of various enterprises will be able to take more than 40 million tons of various goods from the overloaded railroad lines such as the outlets from the Urals to the European USSR, from the northwest to the center and Povolzh'ye and from the central Ukraine to the southwest and other lines at the end of the five-Year plan.

Developing the port facilities, warehouse areas and transport fleet service facilities should be increased at the most rapid rates and access and intraport railroad tracks should be developed. This will contribute to more uniform development and complete utilization of all the components of the technical equipment of ports, to effective interaction of the river and other types of transport and to reducing the idle times of the fleet and railroad cars.

An increase of the capacities and technical re-equipping of ship repair yards and operational repair bases is planned during the 11th Five-Year Plan, which will provide an increase in the level of technical operation of the fleet.

Fulfillment of the tasks which were posed to river transport by the 26th CPSU Congress will contribute to successful economic development of shipments between the railroads and water ways and to improvement of the operational indicators of the country's entire transport system.

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